State of the Workforce Report X:
Region 1

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Center for Business and Economic Research
Culverhouse College of Commerce

University of Alabama Center for Economic Development

Institute for Social Science Research

THE UNIVERSITY OF ALABAMA

State of the Workforce Report X: Region 1

April 2016

by

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Contents

Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 1 and presents implications and recommendations.

- Region 1 had a 6.9 percent unemployment rate in March 2016, with 8,050 unemployed. An underemployment rate of 20.1 percent for 2015 means that the region has a 29,779-strong available labor pool that includes 21,729 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.

- More job opportunities in adjacent areas increased net out-commuting from 11,048 in 2005 to 16,089 in 2014 and commuting within the region went up. Commute time and distance went up in 2015 from 2014 suggesting that congestion worsened. Continuous maintenance and development of transportation infrastructure and systems is important to avoid congestion, which can slow economic development and recovery.

- By sector the top five employers in the region are manufacturing, health care and social assistance, retail trade, educational services, and accommodation and food services. In the first quarter of 2015, they provided 55,022 jobs, 68.7 percent of the regional total. Three of the leading employers—manufacturing, health care and social assistance, and educational services—paid above the region's average monthly wage of $2,638. Economic development programs should aim to diversify and strengthen the region's economy by retaining, expanding, and attracting more high-wage providing industries; workforce development should focus on preparing workers for these industries.

- On average 3,969 jobs were created per quarter from second quarter 2001 to first quarter 2015; quarterly net job flows averaged 270. Job creation is the number of new jobs that are added in the region either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

- The top five high-demand occupations are Engine and Other Machine Assemblers; Team Assemblers; Customer Service Representatives; Registered Nurses; and Welders, Cutters, Solderers, and Brazers.

- The top five fast-growing occupations are Engine and Other Machine Assemblers; Mechanical Engineering Technicians; Information Security Analysts; Machinists; and Helpers—Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters.

- The top 50 high-earning occupations are mainly in health, management, and engineering fields and have a minimum salary of $67,803. Six of the top 10 occupations are in health care and two are in management.

- Of the top 40 high-demand, 19 fast-growing, and 50 high-earning occupations, five belong to all three categories. Twelve occupations are both high-demand and high-earning and 17 occupations are both high-demand and fast-growing.

- Of the region's 561 occupations, 42 are expected to decline over the 2012 to 2022 period. Twenty occupations are expected to decline by at least 2 percent and will lose a minimum of 10 jobs each. Education and training for these 20 occupations should slow accordingly.

- Skill and education requirements for jobs keep rising. Educational and training requirements of high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the future workforce. In the future, more jobs will require postsecondary education and training at a minimum.

- The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. For Region 1 both the pace and scale of training needs to increase for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.

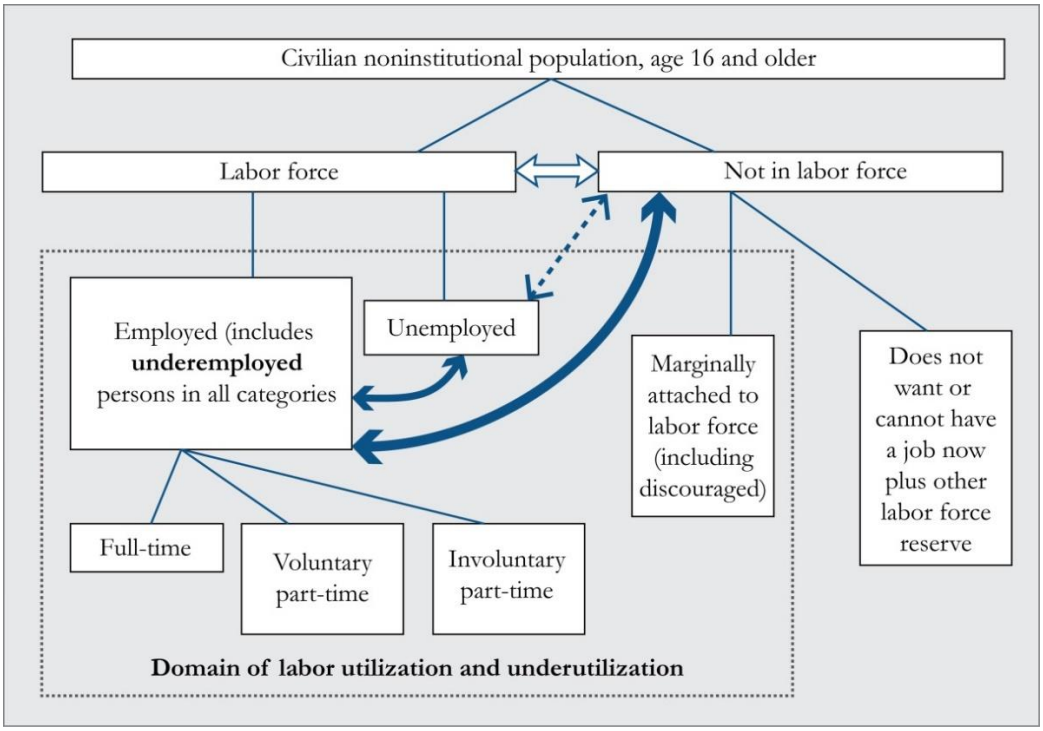
- From a 2012 base, worker shortfalls of about 11,400 for 2022 and 21,600 for 2030 are expected, demanding focus on worker skills and shortages through 2030. Worker shortfalls for critical occupations will also need to be addressed continuously. Strategies to address skill needs and worker shortfalls might include: (1) improvements in education and its funding; (2) economic opportunities that attract new and younger residents; (3) lowering the high school dropout rate; (4) focus on hard-to-serve populations (e.g. out-of-school youth); (5) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

- Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels, while also promoting public and legislative support for education.

- Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the region as well as raise additional local (county and city) tax revenues. This is especially important for a region that has low population and labor force growth rates.

- Regional workforce development and economic development are both necessary for a strong, well-diversified economy. Indeed, one cannot achieve success without the other.

Labor Utilization and Supply Flows



Source: Addy et al[1] and Canon et al[2]

The chart above presents labor utilization and supply flows that explain labor market dynamics in view of recent study findings. The civilian noninstitutional population age 16 and above includes participants in the labor force and nonparticipants. The labor force is made of employed and unemployed persons; the unemployed do not have a job but are actively searching for work. Employed persons include fully employed and underemployed persons in all categories of work (full-time, voluntary part-time, and involuntary part-time). Nonparticipants in the labor force include retirees (voluntary and involuntary), people who do not want to or cannot work for various reasons (e.g., disability, caring for family members, in school or training, etc.), discouraged workers, and other labor force reserves. It has been suggested that a subgroup of nonparticipants referred to as the "waiting group" is more likely than the rest of the nonparticipants to take a job if wages and conditions are satisfactory, but people in this group do not actively search for work. New evidence has shown that between January 2003 and August 2013, the flow of nonparticipants into employment was 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group[1, 2]. Nonparticipant flows to employment are larger in services, management, and professional occupations while unemployed flows to employment are higher in physically intensive occupations such as construction workers and miners. Industry effects should vary by the type and number of occupations they contain. This finding enhances the common understanding of labor market dynamics and influences workforce availability and skills gap analyses.

[1] Addy, S.N., Bonnal, M., and Lira, C. (2012). Towards a More Comprehensive Measure of Labor Underutilization: The Alabama Case, *Business Economics*, vol. 47(3).
[2] Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed," *The Regional Economist*, January.

Workforce Supply

Labor Force Activity

The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g. students, retirees, discouraged workers, and the disabled). Table 1.1 shows labor force information for Region 1 and its six counties for 2015 and March 2016. Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Labor. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

Table 1.1 Region 1 Labor Force Information

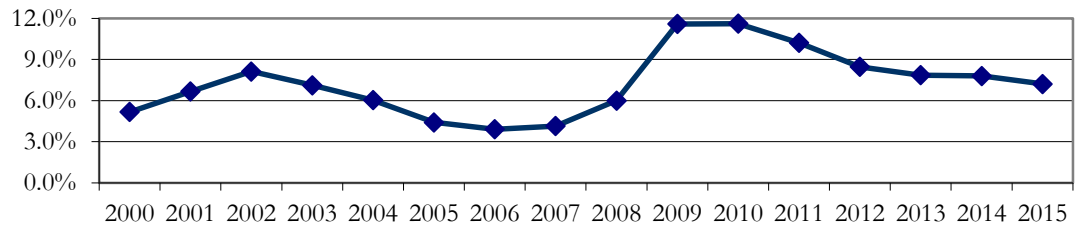
	2015 Annual Average			
	Labor Force	Employed	Unemployed	Rate(%)
Colbert	23,586	21,722	1,864	7.9
Franklin	13,615	12,744	871	6.4
Lauderdale	42,714	39,750	2,964	6.9
Lawrence	13,864	12,802	1,062	7.7
Marion	12,439	11,569	870	7.0
Winston	9,367	8,655	712	7.6
Region 1	115,585	107,242	8,343	7.2
Alabama	2,146,157	2,015,189	130,968	6.1
United States	157,130,000	148,833,000	8,296,000	5.3
	March2016			
	Labor Force	Employed	Unemployed	Rate(%)
Colbert	23,647	21,952	1,695	7.2
Franklin	13,684	12,815	869	6.4
Lauderdale	42,984	40,135	2,849	6.6
Lawrence	13,840	12,798	1,042	7.5
Marion	12,545	11,659	886	7.1
Winston	9,346	8,637	709	7.6
Region 1	116,046	107,996	8,050	6.9
Alabama	2,156,616	2,023,744	132,872	6.2
United States	158,854,000	150,738,000	8,116,000	5.1

Source: Alabama Department of Labor and U.S. Bureau of Labor Statistics.

A slow recovery from the recession that began in 2007 is still keeping county and regional unemployment rates higher than in the pre-recession period. County unemployment rates ranged from 6.4 percent to 7.9 percent (7.2 percent for the region) in 2015 before dropping to a range of 6.4 percent to 7.6 percent (6.9 percent for the region) in March 2016. Franklin County had the lowest unemployment rate and Winston had the highest. None of the counties had rates below the state's 6.2 percent.

The region's unemployment rates were low before the 2001 and 2007 recessions (Figure 1.1). Successful state and local economic efforts brought unemployment to record lows in 2006 and 2007. Employment losses due to the latest recession and closure of some plants raised the regional unemployment rate to double digits in 2009 through 2011. Since then the regional unemployment rate has been declining gradually and in 2015 it was 7.2 percent. Year-to-date monthly labor force data point to a lower regional unemployment rate for 2016. However, the slow recovery from the recession and structural changes in the economy are expected to keep unemployment high for a few more years.

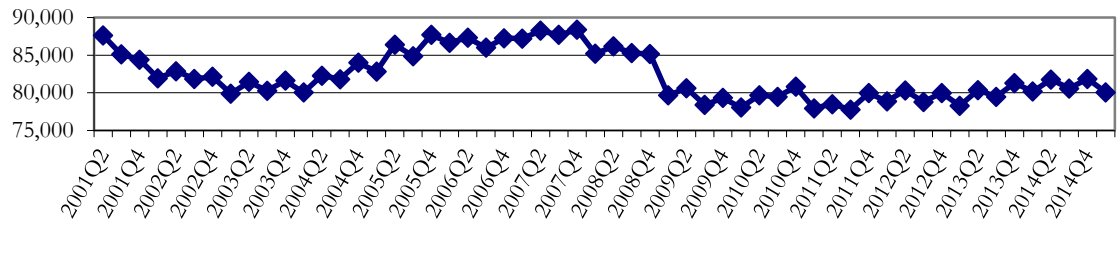
Figure 1.1 Region 1 Unemployment Rate



Source: Alabama Department of Labor.

Nonagricultural employment of the region's residents averaged 82,349 quarterly from the second quarter of 2001 to the first quarter of 2015 (Figure 1.2). The number of jobs declined sharply from the fourth quarter of 2007 through the first quarter of 2010 and is yet to improve significantly. Employment has been trending up since the first quarter of 2013 but it declined in the first quarter of 2016.

Figure 1.2 Region 1 Nonagricultural Employment



Source: Alabama Department of Labor and U.S. Census Bureau.

Table 1.2 shows worker distribution by age in Region 1 for the first quarter of 2015. Older workers, age 55 and over, comprise 21.1 percent of the region's nonagricultural employment. This is slightly higher than the state's 21.0 percent. The region also has a bigger share of workers who are age 65 and over, 5.2 percent versus 4.9 percent for the state. To meet long-term occupational projections for growth and replacement, labor force participation of younger residents must increase or older workers may have to work longer.

Table 1.2 Workers by Age Group (First Quarter 2015)

	Nonagricultural Employment	
Age Group	Number	Percent
14-18	1,611	2.0
19-24	9,950	12.4
25-34	16,673	20.8
35-44	17,046	21.3
45-54	17,859	22.3
55-64	12,784	16.0
65+	4,137	5.2
55 and over total	16,921	21.1
Total all ages	80,060	100.0

Note: Rounding errors may be present. Nonagricultural employment is by place of work, not residence.
Source: U.S. Census Bureau, Local Employment Dynamics Program

Commuting Patterns

More residents commute out of the region for work than nonresidents who commute in (Table 1.3). In 2005 commuter outflow exceeded inflow by 11,048 people. Commuter inflow and outflow levels increased over the next nine years. By 2014 net commuter outflow was about 16,100. Table 1.3 also shows one-way average commute time and distance over recent years. Average commute distance and time went up in 2015 from 2014 implying that congestion worsened somewhat. As the regional economy recovers, congestion could pose challenges. Congestion causes interruptions that could delay or slow economic development. Transportation infrastructure and systems must be maintained and developed properly to ensure that the flow of goods and the movement of workers are not interrupted.

Population

The Region 1 population count of 268,440 in 2010 is 1.3 percent more than in 2000 (Table 1.4); far less than Alabama's 7.5 percent. The population grew in Franklin and Lauderdale counties but shrank in the other four. Growth was greatest in Lauderdale County and declined most in Marion and Winston counties. The 2015 population estimates show a 1.0 percent decline of the region's population since 2010 compared to 1.7 percent increase for Alabama. The population declined in all the counties.

Table 1.5 shows Region 1's population counts, estimates, and projections by age group. The population aged 65 and over grew rapidly after 2010, with the first of the baby boom generation turning 65. This is the major factor behind regional population growth projections. Unfortunately, the prime working age group (20-64) and youth (0-19) population are expected to decline. This poses a challenge for workforce development. The region may have to consider investments in amenities and infrastructure or other appropriate policies to attract new and younger residents in both the short- and long-term to meet labor force needs.

Table 1.3 Commuting Patterns

Year	Region 1 Inflow	Region 1 Outflow
2005	17,583	28,631
2006	19,400	30,173
2007	21,536	36,597
2008	21,531	35,209
2009	20,976	34,685
2010	20,691	34,666
2011	20,458	34,355
2012	20,256	34,837
2013	20,549	35,054
2014	20,805	36,894

Region 1 Counties	Inflow, 2014 Number	Inflow, 2014 Percent	Outflow, 2014 Number	Outflow, 2014 Percent
Colbert	12,069	30.2	10,887	19.4
Franklin	4,874	12.2	7,109	12.7
Lauderdale	12,460	31.2	15,465	27.6
Lawrence	2,398	6.0	10,393	18.5
Marion	4,368	10.9	6,816	12.2
Winston	3,812	9.5	5,400	9.6

	Percent of workers					
Average commute time (one-way)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Less than 20 minutes	62.6	62.1	53.0	59.8	53.5	51.2
20 to 40 minutes	21.3	19.9	31.4	23.4	22.6	24.8
40 minutes to an hour	7.7	9.2	7.5	8.2	10.9	9.9
More than an hour	4.9	4.8	5.5	3.5	2.2	5.9
Average commute distance (one-way)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Less than 10 miles	54.2	53.4	43.5	49.7	50.6	41.9
10 to 25 miles	29.2	24.6	36.7	27.3	30.6	31.1
25 to 45 miles	6.5	12.1	12.4	13.8	12.2	14.2
More than 45 miles	7.9	8.3	6.8	6.3	5.7	8.5

Note: Rounding errors may be present.

Source: U.S. Census Bureau; Alabama Department of Labor; and Center for Business and Economic Research, The University of Alabama.

Table 1.4 Region 1 Population

	1990 Census	2000 Census	2010 Census	2015 Estimate	Change 2000-2010	% Change 2000-2010	Change 2010-2015	% Change 2010-2015
Colbert	51,666	54,984	54,428	54,354	-556	-1.0	-74	-0.1
Franklin	27,814	31,223	31,704	31,696	481	1.5	-8	0.0
Lauderdale	79,661	87,966	92,709	92,596	4,743	5.4	-113	-0.1
Lawrence	31,513	34,803	34,339	33,115	-464	-1.3	-1,224	-3.6
Marion	29,830	31,214	30,776	30,168	-438	-1.4	-608	-2.0
Winston	22,053	24,843	24,484	23,877	-359	-1.4	-607	-2.5
Region 1	242,537	265,033	268,440	265,806	3,407	1.3	-2,634	-1.0
Alabama	4,040,587	4,447,100	4,779,736	4,858,979	332,636	7.5	79,243	1.7
United States	248,709,873	281,421,906	308,745,538	321,418,820	27,323,632	9.7	12,673,282	4.1

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Table 1.5 Population by Age Group and Projections

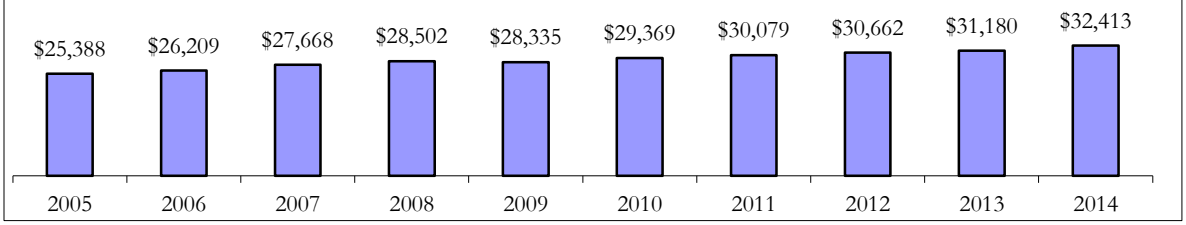
Age Group	2000	2010	2012	2022	2030
0-19	60,271	67,376	64,904	65,117	63,133
20-24	14,426	16,879	17,893	17,427	17,551
25-29	14,896	15,062	15,175	15,409	15,378
30-34	15,324	14,824	15,101	14,732	15,428
35-39	17,133	16,763	15,223	14,608	15,162
40-44	17,121	17,858	17,588	14,685	14,346
45-49	16,031	19,778	18,823	15,746	14,684
50-54	15,422	19,809	19,431	17,198	14,567
55-59	13,199	18,030	18,813	18,674	16,384
60-64	11,569	17,243	17,454	19,215	17,278
65+	34,838	44,818	46,617	57,725	65,575
20-64 Total	**135,121**	**156,246**	**155,501**	**147,694**	**140,778**
Total Population	**230,230**	**268,440**	**267,022**	**270,536**	**269,486**
Change from 2012					
0-19				0.3%	-2.7%
20-64				-5.0%	-9.5%
Total Population				1.3%	0.9%

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Per Capita Income

Per capita income (PCI) in Region 1 was $32,413 in 2014 (Figure 1.3), up 27.7 percent from 2005, but about $5,100 below the state average of $37,512. Colbert County had the highest PCI with $34,616 followed by Lauderdale with $33,933 while Marion had the lowest at $28,783.

Figure 1.3 Region 1 Per Capita Income



Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

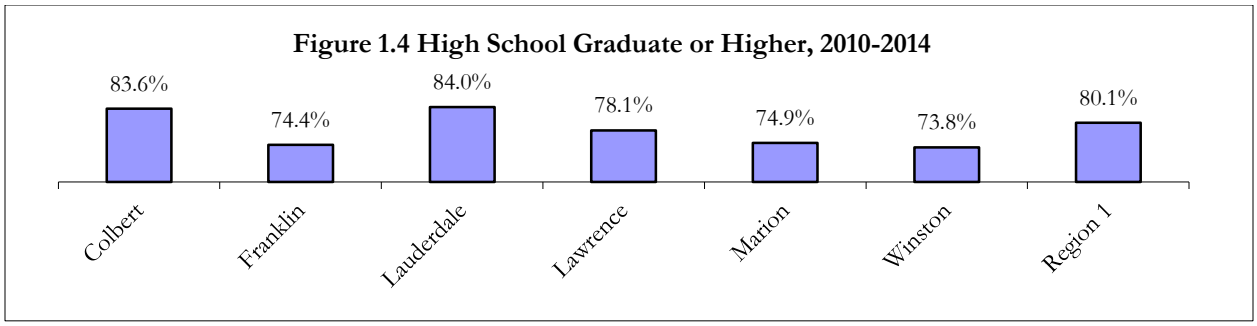
Educational Attainment

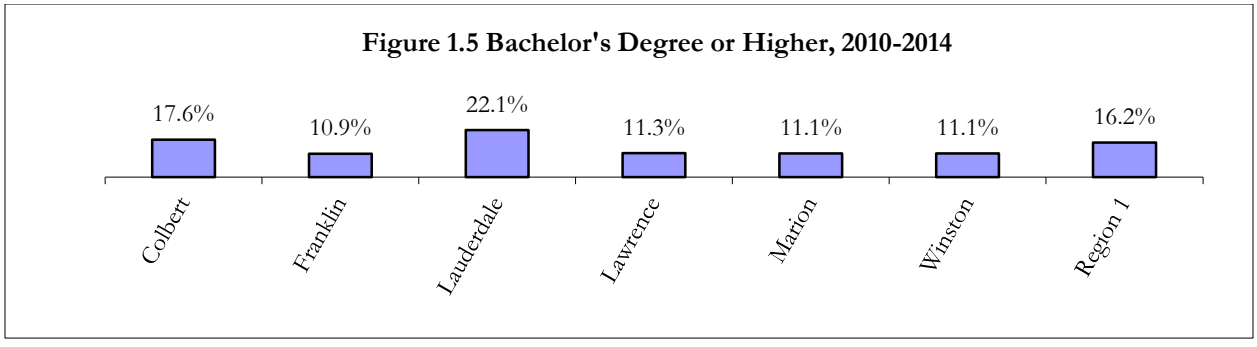
Educational attainment in 2010 to 2014 of Region 1 residents who were 25 years old and over is shown in Table 1.6 and Figures 1.4 and 1.5. Over 80.0 percent had graduated from high school and 16.0 percent held a bachelor's or higher degree. Lauderdale and Colbert counties have higher educational attainment than the other four in the region while Winston and Franklin have the lowest. Job skills rise with education, so educational attainment is important as high-wage jobs in the 21st century demand more skill sets.

Table 1.6 Educational Attainment of Population 25 Years and Over, 2010-2014

	Colbert	Franklin	Lauderdale	Lawrence	Marion	Winston	Region 1
Total	38,009	21,162	62,760	23,411	21,713	17,310	184,365
No schooling completed	373	415	771	463	337	428	2,787
Nursery to 4th grade	145	652	113	107	112	165	1,294
5th and 6th grade	314	724	458	397	390	328	2,611
7th and 8th grade	1,125	899	1,814	1,070	1,022	717	6,647
9th grade	945	551	1,582	679	1,121	1,027	5,905
10th grade	1,321	877	1,938	1,113	1,105	797	7,151
11th grade	1,319	856	2,350	682	827	707	6,741
12th grade, no diploma	680	442	990	619	537	366	3,634
High school graduate/equivalent	12,851	7,706	21,065	9,224	7,402	5,770	64,018
Some college, less than 1 year	2,950	1,204	4,038	1,423	1,695	1,277	12,587
Some college, 1+ years, no degree	6,302	3,263	9,710	3,496	3,053	2,419	28,243
Associate degree	2,978	1,259	4,031	1,491	1,703	1,387	12,849
Bachelor's degree	4,230	1,609	8,299	1,800	1,478	1,211	18,627
Master's degree	1,676	540	3,964	701	756	536	8,173
Professional school degree	447	118	801	117	139	87	1,709
Doctorate degree	353	47	836	29	36	88	1,389

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.





Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Underemployment and Available Labor

Labor force data are often limited to information on the employed and the unemployed that is available from government sources. However, this information is not complete from the perspective of employers. New or expanding employers are also interested in underemployment because current workers are potential employees. In fact, the experience requirements in job ads are evidence that many prospective employers look beyond the unemployed for workers.

Workers in occupations that underutilize their experience, training, and skills are underemployed. These workers might look for other work because their current wages are below what they believe they can earn or because they wish to not be underemployed. Underemployment occurs for various reasons including (i) productivity growth, (ii) spousal employment and income, and (iii) family constraints or personal preferences. Underemployment is unique to areas because of the various contributing factors combined with each area's economic, social, and geographic characteristics.

The existence of underemployment identifies economic potential that is not being realized. It is extremely difficult to measure this economic potential because of uncertainties regarding additional income that the underemployed can bring to an area. It is clear, however, that underemployment provides opportunities for selective job creation and economic growth. A business that needs skills prevalent among the underemployed could locate in places that have such workers regardless of those areas' unemployment rates. A low unemployment rate, which may falsely suggest limited labor availability, is therefore not a hindrance to the business.

The underemployed present a significant labor pool because they tend to respond to job opportunities that they believe are better for reasons that include (i) higher income, (ii) more benefits, (iii) superior terms and conditions of employment, and (iv) a better match with skills, training, and experience. The underemployed also create opportunities for entry level workers as they leave lower-paying jobs for better-paying ones. Even if their previously held positions are lost or not filled (perhaps due to low unemployment or adverse economic conditions), there is economic growth in gaining higher-paying jobs. Such income growth boosts consumption, savings, and tax collections. Quantifying the size of the underemployed is a necessary first step in considering this group for economic development, workforce training, planning, and other purposes. It is important to note that the underemployed can take on more responsibilities and earn more income, but they cannot be counted on to address possible future worker shortages as they are already employed.

Region 1 had an underemployment rate of 20.1 percent in 2015. Applying this rate to March 2016 labor force data means that 21,729 employed residents were underemployed (Table 1.7). Adding the unemployed gives a total available labor pool of 29,779 for the region. This is 3.7 times the number of unemployed and is a more realistic measure of the available labor pool in the region. Prospective employers must be able to offer the underemployed higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs. Underemployment rates ranged from 12.5 percent for Marion County to 27.3 percent for Lauderdale. Lauderdale County had the largest available labor pool and Marion had the smallest. The underemployed workers are somewhat more willing to commute farther and longer for a better job. For the one-way commute, 43.1 percent are prepared to travel for 20 or more minutes longer and 33.9 percent will go 20 or more extra miles. For all employees, 43.0 percent are prepared to commute for 20 or more minutes and 33.6 percent are willing to travel for 20 or more miles.

Table 1.7 Underemployed and Available Labor by County

	Region 1	Colbert	Franklin	Lauderdale	Lawrence	Marion	Winston
Labor Force	116,046	23,647	13,684	42,984	13,840	12,545	9,346
Employed	107,996	21,952	12,815	40,135	12,798	11,659	8,637
Underemployment rate	20.1%	17.8%	24.1%	27.3%	14.0%	12.5%	20.4%
Underemployed workers	21,729	3,903	3,085	10,945	1,792	1,457	1,763
Unemployed	8,050	1,695	869	2,849	1,042	886	709
Available labor pool	**29,779**	**5,598**	**3,954**	**13,794**	**2,834**	**2,343**	**2,472**

Note: Rounding errors may be present. Based on March 2016 labor force data and 2015 underemployment rates.
Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

Underemployment rates for counties, Workforce Development Regions (WDRs), and the state were determined from an extensive survey on the state's workforce. A total of 543 complete responses were obtained from Region 1. About 59.0 percent (323 respondents) were employed, of whom 65 stated that they were underemployed. A lack of job opportunities in their area, low wages at the available jobs, living too far from jobs, owning a house in their area, taking care of someone other than a child, and other family or personal obligations are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement and disability or other health concerns as the main reasons for their status, but some also cite social security limitations, a lack of job opportunities in their area, and low wages at available jobs as additional key factors. Such workers may become part of the labor force if their problems can be addressed. Indeed a recent study found that the flow of labor force nonparticipants to employment status was 60.0 percent more than that of unemployed workers who gained employment.[3] This implies that the region's available labor pool could be larger than estimated in this report.

A comparison of underemployed workers to the overall workforce in Region 1 shows that:

- Fewer work full-time and more of the part-timers prefer full-time work.
- More hold multiple jobs.
- They have similar commute time and distance to all employees.
- More are in computer and mathematical; community and social services; healthcare support; protective service; office and administrative support; and construction and extraction occupations.
- More are in agriculture, forestry, fishing, and hunting; utilities; manufacturing; retail trade; finance and insurance; administrative and support and waste management and remediation; health care and social assistance; accommodation and food services; and other services industries.
- They earn less and have lower job tenure.
- Fewer believe their jobs fit well with their education and training, skills, and experience.
- More believe they are qualified for a better job.
- More would leave their current jobs for higher income; 12.0 percent of the underemployed would leave for just up to 5.0 percent more income compare to 9.6 percent of all employees.

[3] Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed", *The Regional Economist*, January.

- Their willingness to extend their commute for a better job is similar to that of all employers.
- Fewer are satisfied with their current jobs.
- More are willing to train for a better job even if they have to pay some or all the training cost.
- More have sought better jobs in the preceding quarter; 35.4 percent sought a better job compared to 22.0 percent of all workers.
- They have the same median age but lower educational attainment.
- Fewer are married and more are males.
- More are Hispanic and fewer are white.

Table 1.8 shows the detailed survey results on job satisfaction and willingness to train. Responses for overall job satisfaction as well as various aspects of the job were obtained. In general, most of the region's workers (74.5 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work that they do and least satisfied with the earnings they receive. Clearly, fewer underemployed workers are satisfied with their jobs (49.2 percent). The underemployed are also much more dissatisfied with their earnings. They are most satisfied with their commuting distance.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (73.9 percent vs. 59.6 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by government and lowest when the trainee must pay the full costs. The underemployed are more willing to train for the new or better job except if government pays all the cost. The results strongly show that workers expect the government to bear at least part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

Table 1.8 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction					
	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed					
Overall	5.9	5.3	13.7	26.1	48.5
Earnings	12.7	8.4	16.5	29.2	32.6
Retention	5.3	5.3	11.5	17.1	59.6
Work	0.6	2.5	7.8	27.0	61.8
Hours	4.4	5.6	9.9	18.3	61.2
Shift	5.9	3.4	7.1	16.5	66.5
Conditions	5.9	5.3	10.9	22.1	55.6
Commuting Distance	5.0	5.3	10.3	10.6	68.0
Underemployed					
Overall	10.8	10.8	29.2	20.0	29.2
Earnings	35.4	12.3	18.5	24.6	9.2
Retention	9.2	10.8	12.3	12.3	46.2
Work	0.0	9.2	15.4	24.6	50.8
Hours	9.2	13.9	15.4	20.0	41.5
Shift	7.7	9.2	7.7	13.9	61.5
Conditions	9.2	10.8	16.9	16.9	46.2
Commuting Distance	6.2	12.3	4.6	10.8	66.2

Willingness to Train					
	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed					
For a new or better job	24.6	2.2	13.0	11.9	47.7
If paid by trainee	45.0	20.6	16.8	5.3	9.1
If paid by trainee and government	16.8	8.6	33.0	19.1	18.2
If paid by government	4.3	1.0	10.5	14.8	67.9
Underemployed					
For a new or better job	9.2	3.1	13.9	12.3	61.5
If paid by trainee	37.3	18.6	18.6	6.8	13.6
If paid by trainee and government	13.6	3.4	32.2	18.6	27.1
If paid by government	5.1	3.4	10.2	8.5	72.9

Note: Rounding errors may be present.

Source: Center for Business and Economic Research, The University of Alabama.

Workforce Demand

Industry Mix

The manufacturing sector was the region's leading employer with 18,860 jobs in the first quarter of 2015 (Table 1.9). Rounding out the top five industries by employment are health care and social assistance, retail trade, educational services, and accommodation and food services. These five industries provided 55,022 jobs, 68.7 percent of the region's total. The average monthly wage across all industries in the region was $2,638; three of the leading employers paid more than this average. New hire monthly earnings averaged $1,797, about 68.0 percent of the region's average monthly wage. The highest average monthly wages were in utilities at $4,636, mining $3,733, finance and insurance $3,684, and management of companies and enterprises $3,503. Accommodation and food services paid the least at $1,056. The highest average monthly new hire wages were for construction at $3,574; finance and insurance at $3,037; utilities at $2,908; and professional, scientific, and technical services with $2,849. Accommodation and food services paid newly hired workers the least, $804.

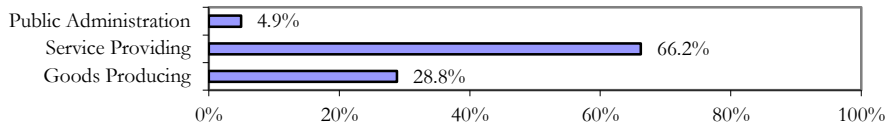
Table 1.9 Industry Mix (First Quarter 2015)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	610	0.76%	17	$2,213	$1,446
21 Mining	277	0.35%	19	$3,733	$2,396
22 Utilities	949	1.19%	14	$4,636	$2,908
23 Construction	3,340	4.17%	8	$2,905	$3,574
31-33 Manufacturing	18,860	23.56%	1	$3,101	$2,365
42 Wholesale Trade	2,996	3.74%	9	$3,449	$2,645
44-45 Retail Trade	10,860	13.56%	3	$2,015	$1,356
48-49 Transportation and Warehousing	1,428	1.78%	12	$2,827	$2,039
51 Information	616	0.77%	16	$3,129	$1,408
52 Finance and Insurance	2,865	3.58%	10	$3,684	$3,037
53 Real Estate and Rental and Leasing	693	0.87%	15	$2,462	$2,075
54 Professional, Scientific, and Technical Services	1,393	1.74%	13	$3,102	$2,849
55 Management of Companies and Enterprises	270	0.34%	20	$3,503	$1,690
56 Administrative and Support and Waste Management and Remediation Services	3,718	4.64%	7	$1,839	$1,520
61 Educational Services	7,211	9.01%	4	$2,674	$913
62 Health Care and Social Assistance	10,930	13.65%	2	$2,950	$1,975
71 Arts, Entertainment, and Recreation	394	0.49%	18	$1,231	$810
72 Accommodation and Food Services	7,161	8.94%	5	$1,056	$804
81 Other Services (Except Public Administration)	1,535	1.92%	11	$2,293	$2,021
92 Public Administration	3,956	4.94%	6	$2,593	$1,581
ALL INDUSTRIES	**80,060**	**100.00%**		**$2,638**	**$1,797**

Source: Alabama Department of Labor and U.S. Census Bureau.

By broad industry classification, service providing industries generated 66.2 percent of jobs in first quarter 2015 (Figure 1.6). Goods producing industries were next with 28.8 percent and public administration accounted for 4.9 percent. The distribution is for all nonagricultural jobs in the region, but there is significant variation by county.

Figure 1.6 Region 1 Employment Distribution



Source: Alabama Department of Labor and U.S. Census Bureau.

Job Creation and Net Job Flows

On average, 3,969 jobs were created per quarter from second quarter 2001 to first quarter 2015. Figure 1.7 shows job creation trends have been relatively flat since the first quarter of 2012. Similarly, the average quarterly net job flows have not changed much since the first quarter of 2013 after rising for two consecutive quarters (Figure 1.8). From second quarter 2001 to first quarter 2015 quarterly net job flows averaged 270. Quarterly net job flows fluctuated between a loss of 3,132 to a gain of 3,164 over the period. Job creation refers to the number of new jobs that are created either by new area businesses or through the expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

Figure 1.7 Job Creation in Region 1

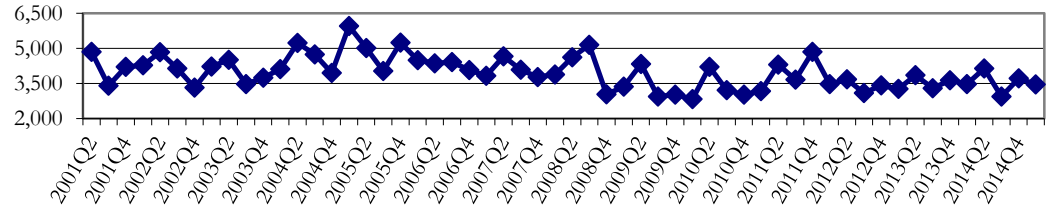
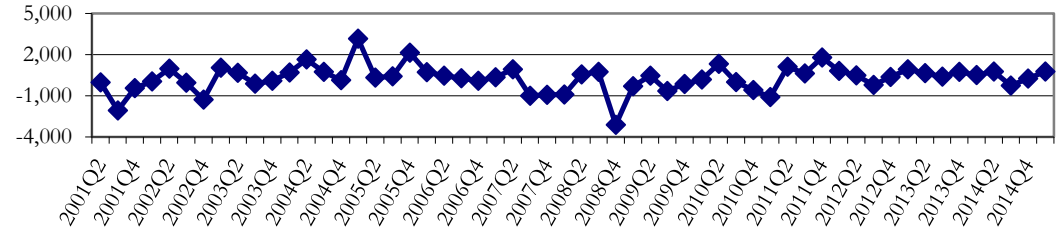


Figure 1.8 Region 1 Net Job Flows



Source: Alabama Department of Labor and U.S. Census Bureau.

High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations

Excluding occupational categories, there are 561 single occupations in Region 1. Table 1.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2012 to 2022 period. Many of these occupations are common to two of the five largest employment sectors identified earlier in Table 1.9: health care and social assistance and manufacturing. Thus, these sectors will continue to dominate employment in the region.

The top five high-demand occupations are Engine and Other Machine Assemblers; Team Assemblers; Customer Service Representatives; Registered Nurses; and Welders, Cutters, Solderers, and Brazers. Seventeen of the high-demand occupations are also fast-growing. This means that these 17 occupations have a minimum annual growth rate of 1.55 percent, much faster than the regional and state occupational growth rates of 0.86 percent and 0.99 percent, respectively.

The 19 fastest growing occupations ranked by projected growth of employment are listed in Table 1.11. Many of these occupations are manufacturing or health-related. The top five fast-growing occupations are Engine and Other Machine Assemblers; Mechanical Engineering Technicians; Information Security Analysts; Machinists; and Helpers—Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters

Table 1.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in health, management, and engineering fields. Six of the top 10 listed are in health and three are management occupations. Any discussion of earnings must consider that wages vary with experience. Occupations with the highest entry wages may not necessarily have the highest average or experienced wages.

The selected high-earning occupations are generally not fast-growing or in high-demand. Five occupations are in all three categories (Table 1.10). Twelve occupations are both high-earning and high-demand.

Of the region's 561 occupations, 42 are expected to decline over the 2012 to 2022 period. Employment in the 20 sharpest-declining occupations will fall by at least two percent, with each losing a minimum of 10 jobs over the period (Table 1.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the economy of the region.

Table 1.10 Selected High-Demand Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Engine and Other Machine Assemblers*	95	95	0
Team Assemblers	85	50	30
Customer Service Representatives	80	40	40
Registered Nurses	65	30	35
Welders, Cutters, Solderers, and Brazers*	45	25	20
Machinists*	40	30	10
Licensed Practical and Licensed Vocational Nurses	40	20	20
General and Operations Managers	**35**	**15**	**20**
Home Health Aides*	25	20	10
Personal Care Aides*	25	20	5
Electricians	20	10	10
Accountants and Auditors	20	5	15
Middle School Teachers, Except Special and Career/Technical Education	15	5	10
Billing and Posting Clerks	15	5	5
Physical Therapist Assistants*	10	5	5
Mechanical Engineers*	**10**	**5**	**5**
Dental Hygienists*	10	5	5
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	10	5	5
First-Line Supervisors of Construction Trades and Extraction Workers	10	10	5
Plumbers, Pipefitters, and Steamfitters	10	5	5
Medical Secretaries*	10	5	0
Pharmacists	**10**	**5**	**5**
Dental Assistants	10	5	5
Management Analysts*	**5**	**5**	**0**
Physical Therapists*	**5**	**5**	**0**
Nurse Practitioners	**5**	**5**	**0**
Chemical Engineers*	**5**	**0**	**0**
Medical and Health Services Managers	**5**	**0**	**0**
Diagnostic Medical Sonographers*	5	5	0
Cost Estimators	5	0	5
Market Research Analysts and Marketing Specialists*	5	0	0
Construction Managers	**5**	**5**	**5**
Computer-Controlled Machine Tool Operators, Metal and Plastic	5	5	5
Helpers--Electricians*	5	5	0
Purchasing Agents, Except Wholesale, Retail, and Farm Products	5	5	5
Maintenance Workers, Machinery*	5	0	0
Radiologic Technologists	5	5	5
Occupational Therapists	**0**	**0**	**0**
Computer and Information Systems Managers	**0**	**0**	**0**
Information Security Analysts*	**0**	**0**	**0**

Note: Occupations are growth- and wages-weighted and data are rounded to the nearest 5. Occupations in bold are also high-earning.

* - Qualify as both high-demand and fast-growing occupations.

Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Table 1.11 Selected Fast-Growing Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2012	2022			
Engine and Other Machine Assemblers*	NA	NA	8,092	58.17	95
Mechanical Engineering Technicians	20	40	95	7.18	0
Information Security Analysts*	**10**	**20**	**36**	**7.18**	**0**
Machinists*	460	760	64	5.15	40
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	NA	NA	38	4.14	0
Diagnostic Medical Sonographers*	60	90	49	4.14	5
Physical Therapist Assistants*	150	220	45	3.90	10
Helpers--Electricians*	140	200	35	3.63	5
Personal Care Aides*	510	720	41	3.51	25
Market Research Analysts and Marketing Specialists*	50	70	30	3.42	5
Home Health Aides*	460	640	40	3.36	25
Mechanical Engineers*	**150**	**200**	**29**	**2.92**	**10**
Management Analysts*	**120**	**160**	**37**	**2.92**	**5**
Medical Secretaries*	190	250	32	2.78	10
Dental Hygienists*	160	210	32	2.76	10
Welders, Cutters, Solderers, and Brazers*	840	1,100	30	2.73	45
Physical Therapists*	**100**	**130**	**30**	**2.66**	**5**
Chemical Engineers*	**40**	**50**	**38**	**2.26**	**5**
Maintenance Workers, Machinery*	60	70	33	1.55	5

Note: Employment data is rounded to the nearest 10 and job openings are rounded to the nearest 5. Occupations in bold are also high-earning.

* - Qualify as both high-demand and fast-growing occupations. NA - Not available.

Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Table 1.12 Selected High-Earning Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary ($)
	2012	2022			
Family and General Practitioners	20	20	0.00	0	218,771
Dentists, General	40	50	2.26	0	202,690
Physicians and Surgeons, All Other	150	180	1.84	10	201,911
Chief Executives	80	80	0.00	0	197,258
Nurse Anesthetists	40	50	2.26	0	151,657
Pediatricians, General	10	10	0.00	0	145,284
Pharmacists*	250	280	1.14	10	139,512
Management Analysts*	**120**	**160**	**2.92**	**5**	**130,696**
Financial Managers	150	160	0.65	5	110,642
General and Operations Managers*	1,010	1,160	1.39	35	106,845
Veterinarians	20	20	0.00	0	104,913
Occupational Therapists*	**30**	**30**	**0.00**	**0**	**101,300**
Computer and Information Systems Managers*	30	40	2.92	0	98,801
Architectural and Engineering Managers	50	60	1.84	0	98,340
Software Developers, Systems Software	10	10	0.00	0	97,949
Nurse Practitioners*	110	150	3.15	5	97,298
Physical Therapists*	**100**	**130**	**2.66**	**5**	**93,340**
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	20	20	0.00	0	92,344
Medical and Health Services Managers*	100	120	1.84	5	92,336
Information Security Analysts*	**10**	**20**	**7.18**	**0**	**91,556**
Chemical Engineers*	**40**	**50**	**2.26**	**5**	**91,275**
Industrial Production Managers	200	210	0.49	5	90,196
Administrative Services Managers	10	10	0.00	0	89,724
Chiropractors	40	40	0.00	0	88,653
Environmental Engineers	NA	NA	0.00	0	88,648
Optometrists	NA	NA	0.00	0	88,096
Purchasing Managers	40	50	2.26	0	86,368
Securities, Commodities, and Financial Services Sales Agents	60	60	0.00	0	83,699
Electrical Engineers	60	60	0.00	0	83,600
Education Administrators, Postsecondary	50	60	1.84	0	83,266
Transportation, Storage, and Distribution Managers	30	30	0.00	0	82,756
Human Resources Managers	20	20	0.00	0	81,795
Real Estate Sales Agents	100	120	1.84	0	81,150
Funeral Service Managers	20	30	4.14	0	81,121
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	10	10	0.00	0	80,959
Mechanical Engineers*	**150**	**200**	**2.92**	**10**	**80,339**
Engineers, All Other	110	120	0.87	0	79,480
Education Administrators, Elementary and Secondary School	190	200	0.51	5	76,902
Industrial Engineers	140	150	0.69	5	74,963
Lawyers	200	230	1.41	5	74,547
Computer Systems Analysts	40	50	2.26	0	73,007
Managers, All Other	230	250	0.84	5	72,798
Construction Managers*	180	210	1.55	5	72,633
Postmasters and Mail Superintendents	30	30	0.00	0	72,465
Instructional Coordinators	30	30	0.00	0	72,336
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	60	60	0.00	0	69,320
Business Operations Specialists, All Other	70	70	0.00	0	68,998
Speech-Language Pathologists	20	20	0.00	0	68,704
Electronics Engineers, Except Computer	NA	NA	0.00	0	68,364
Personal Financial Advisors	50	50	0.00	0	67,803

Note: Employment and salaries data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2014 release of the Occupational Employment Statistics (OES) combined employment and wage file. Estimates for specific occupations may include imputed data. Occupations in bold are also fast-growing. NA – Not available.

* - Qualify as both high-earning and high-demand occupations.

Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

Table 1.13 Selected Sharp-Declining Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Employment		Net Change	Percent Change
	2012	2022		
Meat, Poultry, and Fish Cutters and Trimmers	1,210	700	-510	-42
Paper Goods Machine Setters, Operators, and Tenders	640	270	-370	-58
Farmers, Ranchers, and Other Agricultural Managers	1,750	1,550	-200	-11
Industrial Truck and Tractor Operators	640	470	-170	-26
Sewing Machine Operators	340	240	-100	-29
Machine Feeders and Offbearers	280	190	-90	-31
Postal Service Mail Carriers	310	240	-70	-23
Stationary Engineers and Boiler Operators	NA	NA	-60	-70
Chemical Plant and System Operators	NA	NA	-50	-33
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	2,050	2,010	-40	-2
Packers and Packagers, Hand	490	450	-40	-9
Cleaners of Vehicles and Equipment	270	230	-40	-17
Electrical and Electronics Repairers, Commercial and Industrial Equipment	140	100	-40	-31
Packaging and Filling Machine Operators and Tenders	280	250	-30	-10
Electric Motor, Power Tool, and Related Repairers	NA	NA	-30	-68
Food Preparation Workers	620	600	-20	-4
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	250	230	-20	-11
Power Plant Operators	NA	NA	-20	-19
Postal Service Clerks	60	40	-20	-29
Cutting and Slicing Machine Setters, Operators, and Tenders	100	90	-10	-2
Meat, Poultry, and Fish Cutters and Trimmers	1,210	700	-510	-42
Paper Goods Machine Setters, Operators, and Tenders	640	270	-370	-58
Farmers, Ranchers, and Other Agricultural Managers	1,750	1,550	-200	-11

Note: Employment data are rounded to the nearest 10. NA - Not available due to disclosure restrictions.

Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Skills and Skills Gap Analyses

Jobs require skill sets and it is necessary that jobholders have the relevant skills. Table 1.14 shows skill types and definitions as provided by O*NET Online, which offers skill sets for all occupations ranked by the degree of importance. High-earning occupations typically require skills that are obtained in pursuit of high education that such jobs require. Lower earning occupations require more basic skill sets. Some occupations have no minimum skill set requirements (e.g. dishwashers and maids).

Table 1.15 shows the percentage of selected occupations in the region that list a particular skill as primary. We define primary skills as the 10 most important skills in the required skill set for an occupation. It is important to note that a particular skill may be more important and more extensively used in one occupation than another. Table 1.15 does not address such cross-occupational skill importance comparisons. In general, basic skills are most frequently listed as primary, which means that they are important for practically all jobs.

Table 1.14 Skill Types and Definitions

Basic Skills: Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Mathematics — Using mathematics to solve problems.

Monitoring — Monitoring / Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.

Science — Using scientific rules and methods to solve problems.

Speaking — Talking to others to convey information effectively.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Complex Problem Solving Skills: Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Resource Management Skills: Developed capacities used to allocate resources efficiently.

Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.

Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.

Time Management — Managing one's own time and the time of others.

Social Skills: Developed capacities used to work with people to achieve goals.

Coordination — Adjusting actions in relation to others' actions.

Instructing — Teaching others how to do something.

Negotiation — Bringing others together and trying to reconcile differences.

Persuasion — Persuading others to change their minds or behavior.

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Systems Skills: Developed capacities used to understand, monitor, and improve socio-technical systems.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Technical Skills: Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Installation — Installing equipment, machines, wiring, or programs to meet specifications.

Operation and Control — Controlling operations of equipment or systems.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operations Analysis — Analyzing needs and product requirements to create a design.

Programming — Writing computer programs for various purposes.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Repairing — Repairing machines or systems using the needed tools.

Technology Design — Generating or adapting equipment and technology to serve user needs.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Source: O*NET Online (http://online.onetcenter.org/skills/).

Table 1.15 Percentage of Selected Occupations for Which Skill Is Primary

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Basic Skills			
Active Learning	40	37	44
Active Listening	85	84	82
Critical Thinking	88	95	78
Learning Strategies	3	0	6
Mathematics	8	11	10
Monitoring	68	68	54
Reading Comprehension	73	68	80
Science	13	16	16
Speaking	73	68	80
Writing	38	37	46
Complex Problem Solving Skills			
Complex Problem Solving	33	37	58
Resource Management Skills			
Management of Financial Resources	5	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	8	0	18
Time Management	35	37	26
Social Skills			
Coordination	43	47	38
Instructing	15	16	6
Negotiation	3	0	18
Persuasion	8	5	10
Service Orientation	33	32	24
Social Perceptiveness	50	42	46
Systems Skills			
Judgment and Decision Making	53	53	66
Systems Analysis	8	11	8
Systems Evaluation	5	11	6
Technical Skills			
Equipment Maintenance	5	5	2
Equipment Selection	0	0	0
Installation	3	0	0
Operation and Control	8	16	0
Operation Monitoring	10	21	2
Operations Analysis	5	11	6
Programming	0	0	2
Quality Control Analysis	13	21	2
Repairing	8	11	2
Technology Design	0	0	0
Troubleshooting	8	11	2

Note: Rounding errors may be present.

Source: O*NET Online and Center for Business and Economic Research, The University of Alabama.

High-earning occupations require more active learning, learning strategies, reading comprehension, science, speaking, writing, complex problem solving, management of personnel resources, negotiation, persuasion, judgment and decision making, and programming skills than both high-demand and fast-growing jobs. These are skills that require postsecondary education and long training periods. However, high-earning jobs require less social skills and technical skills. High-demand occupations in general (excluding time management) require more resource management than fast-growing occupations.

Table 1.16 shows skill gap indexes for all the 35 skills shown in Table 1.14 based on previous occupation projections (2008 to 2018). Skills gap indexes range from 0 up to 100 and are standardized measures of the difference between current supply and projected demand. The index does not provide any information about current or base year skill supply. It focuses on the projection period and identifies critical skill needs. The index essentially ranks expected training needs. The higher the index the more critical the skill is over the specified projection period.

For policy and planning purposes, skill gap indexes have to be considered together with replacement indexes, which illustrate the expected share of job openings due to replacement. Replacement is necessary because of turnover and people leaving the labor force. The smaller the replacement index, the larger the share of job openings due to growth, which in turn implies a need to increase the pace of skill training. Skill gap indexes point to the need to ramp up the scale of skill training while replacement indexes address the pace of training.

By skill type the skill gap indexes show that basic skills are most critical followed by social, complex problem solving, resource management, system, and technical skills. Although the skills gap indexes are for a previous projection period, they are applicable to current projections. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. Both the pace and scale of training need to increase for basic and social skills.

Education and Training Issues

Educational attainment in Region 1 is low compared to the state as a whole. Just over 80 percent of residents age 25 and over have graduated from high school, compared to 84.0 percent for Alabama. About 16.0 percent have a bachelor's or higher degree versus 23.0 percent for the state. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the region.

Table 1.17 shows the number of selected occupations in the region for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment; only seven of the high-earning occupations do not require a bachelor's or higher degree. Twenty-one (53.0 percent) of the 40 high-demand occupations require an associate degree at the minimum and 16 (40.0 percent) require a bachelor's or higher degree. Ten (53.0 percent) of the 19 fast-growing occupations require an associate's degree at the minimum, with six (32.0 percent) requiring a bachelor's or higher degree.

The 2012 to 2022 occupational projections indicate that in the future more jobs will require postsecondary education and training at a minimum. Job ads are increasingly requiring a high school

diploma or GED at a minimum. Of the region's 561 occupations, 42 are expected to decline over the period and education and training for these should slow accordingly.

Table 1.16 Skills Gap Indexes (Base Year 2008 and Projected Year 2018)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Reading Comprehension	1,120	68	100
Critical Thinking	1,015	69	97
Active Listening	1,085	71	94
Active Learning	900	67	91
Coordination	855	68	89
Speaking	830	70	86
Instructing	810	68	83
Monitoring	755	68	80
Learning Strategies	650	68	77
Time Management	650	71	74
Writing	705	72	71
Social Perceptiveness	610	71	69
Service Orientation	555	69	66
Persuasion	495	72	63
Complex Problem Identification	415	69	60
Judgment and Decision Making	400	74	57
Mathematics	430	72	54
Equipment Selection	360	69	51
Troubleshooting	280	61	49
Equipment Maintenance	295	68	46
Negotiation	230	76	43
Installation	175	60	40
Operation Monitoring	205	68	37
Management of Personnel Resources	255	84	34
Repairing	195	64	31
Operation and Control	150	77	29
Quality control	110	64	26
Management of Financial Resources	110	86	23
Systems Evaluation	70	79	20
Operations Analysis	55	82	17
Science	45	78	14
Systems Analysis	25	60	11
Management of Material Resources	70	100	9
Technology Design	20	75	6
Programming	5	0	3

Note: The skills gap indexes are from 2008 to 2018 projection period and not 2012 to 2022.

Source: Alabama Department of Labor.

Table 1.17 Number of Selected Occupations by Education/Training Requirement

Most Common Education/Training Requirements Categories	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Doctoral Degree or First Professional Degree	2	1	10
Master's Degree	2	0	7
Bachelor's or Higher Degree Plus Work Experience	6	2	14
Bachelor's Degree	6	3	12
Associate Degree	5	4	1
Postsecondary Non-Degree Plus On-the-job Training	1	0	1
Postsecondary Non-Degree	2	0	0
Some College, no Degree Plus On-the-job Training	0	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	14	6	4
High School Diploma	0	0	1
Less than High School Plus On-the-job Training	2	3	0
Less than High School	0	0	0

Note: The on-the-job training refers to the typical on-the-job training needed to attain competency in the occupation in addition to the typical education needed for entry to the occupation. This could be long-term, moderate-term, or short-term on-the-job training. **Long-term** requires more than 12 months on-the-job training. **Moderate-term** requires one to 12 months of on-the-job training. **Short-term** requires up to one month of on-the-job training. These types of training are more common in occupations that require postsecondary non-degree or less educational attainment. Other types of on-the-job training requirements that may be needed but are not shown on the table are apprenticeship and internship/residency that are typical in certain professions many of which require higher educational attainment.

Source: O*NET Online; Center for Business and Economic Research, The University of Alabama; and Alabama Department of Labor.

Implications and Recommendations

From a 2012 base, worker shortfalls of 11,398 and 21,648 are estimated by 2022 and 2030 respectively (Table 1.18). A focus on worker skills and the expected shortfall must be a priority through 2030.

Table 1.18 Expected Jobs Shortfall

	2012-2022	2012-2030
Total population growth (percent)	1.3	0.9
Age 20-64 population growth (percent)	-5.0	-9.5
Job growth (percent)	8.3	15.9
Worker shortfall (percent points)	13.3	25.4
Worker shortfall (number)	11,398	21,648

Source: Center for Business and Economic Research, The University of Alabama.

Since employment is critical to economic development, strategies to address potential shortfalls must be adopted and implemented. Such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity. Efforts to address the need for higher labor force participation, higher productivity, and faster labor force growth to meet workforce demand must include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering of the high school dropout rate; (5) use of economic opportunities to attract new and younger residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The educational and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the future workforce. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs in particular demonstrates a strong need for training in these skills. The pace and scale of training needs to increase for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills while enhancing these basic skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps. Education and training for the 20 sharp-declining occupations in Table 1.13 should slow accordingly.

Another very important reason to improve education is that more educated people are more likely to work; data on worker participation and educational attainment show that labor force participation increases with worker education. Productivity also rises with education, which yields high private and social returns. Workforce development must view all education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and must provide for flexibility as workforce needs change over time and demand different priorities.

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include persons in poverty,

those receiving welfare, residents of sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are in poverty. They usually have difficulty finding work because they have low levels of educational attainment, lack occupational skills, or face geographic or other barriers. They are a potential human resource, but investment in training, transportation, child care, infrastructure, etc. may be needed to tap this resource.

In-migration is one way of growing the labor force as it helps population growth. The region's population growth rate is low and the working age group is expected to decline in the future. This might hinder the region's ability to meet the expected job demand barring future economic slowdowns. Higher employment demand could be partially served by in-commuting. However, new residents can be attracted using higher-paying job opportunities from the region's economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial to a region than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the region's workforce challenge. Such policies can be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase (see Table 1.5), it becomes even more important that they be active in the workforce. Older worker participation has been rising nationally since the early 1990s. This has been attributed to reasons including:

- Older workers can work longer because they are healthier
- The number of physically demanding jobs is falling
- Defined contribution plans are replacing pensions
- There are fewer employer-paid retiree health insurance programs
- Social security reforms affecting those born after 1938 (i) gradually raise the normal retirement age from 65 to 67, (ii) increase the rate at which monthly payments rise with delayed benefits, and (iii) eliminate the reduction in benefits for those working beyond the full retirement age.

Diversifying the region's economy will strengthen it. This demands that economic development also focus on retaining, expanding, and attracting businesses that provide more high-earning jobs. Current workers—including the underemployed—would welcome higher-earning opportunities. An economic development focus on diversification would require that workforce development pay attention to postsecondary and higher educational systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions would help raise personal income for the region and provide additional local (county and city) tax revenue. Raising personal income by improving educational attainment and technological skills for a region that has low population and labor force growth rates is an effective economic development strategy. Together, workforce development and economic development can build a strong, well-diversified economy. Indeed, one cannot achieve success without the other.